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MADRAS RECORD OFFICE.

Government of Madras.

Public Works DEPARTMENT.

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Dated 22-2- 18 .

Not to be folded or roughly handled

Proceedings of the Madras Government, Public Works Department, 22nd February 1862.

Read the following papers:—

No. 367. To the Right Honorable Sir CHARLES WOOD, Bart., G. C. B., Secretary of State for India, dated Fort William, 8th October 1861, No. 39.

SIR,

1. We have the honor to transmit for your information copy of a Memorandum on the advantages of Stern-wheel Steam Boats for the navigation of shallow rivers as compared with Side-wheel and Screw Steamers.

2. We beg to suggest that the attention of the Directors of the River Steamer Companies which are in connexion with Government, and of those Officers who are employed to select boats for the Government service on the Ganges, the Indus and the Godavery, may be drawn to the Steamers here described, which appear peculiarly suited to the shallow rivers of India.

3. It would be very desirable to have them tried on the Upper Punjaub rivers, the Gogra and the Upper Godavery, and if the vessels now building at Liverpool are favorably reported on, measures might be taken to send out three of suitable dimensions for trial on the above mentioned rivers.

We have, &c.,
(Signed) CANNING.
(„) H. ROSE.
(„) H. B. E. FRERE.
(„) R. NAPIER.

No. 267.

MEMORANDUM.

Copy forwarded to the Chief Secretary to the Government of Fort Saint George for information.

(Signed) JOHN E. REDDIE,
Offg. Secy. to the Govt. of India, Marine Dept.

FORT WILLIAM,
30th December 1861.

No. 49.

Fort William, Marine Department, the 31st January 1862.

OFFICE MEMORANDUM.

The undersigned has the honor to transmit herewith to the Chief Secretary to the Government of Madras a copy of the Memorandum on the advantages of Stern-wheel Steam Boats, in compliance with his telegram of 23rd instant.

(Signed) JOHN E. REDDIE,
Offg. Secy. to the Govt. of India, Marine Dept.

WINDSOR FOUNDRY AND IRON WORKS,
Office Derby Buildings Liverpool,
Liverpool, 15th May 1861.
London Office, 38, *Parliament Street.*

1. Advantages of Stern-wheel Steam Boats for very shallow and rapid rivers or canals as compared with Side-wheel and Screw Steamers.

2. In consequence of there being no side-paddles the hull can be made wider, and consequently the *draught of water is less.* The shafting is much less in length and for the same power less in diameter, consequently there is less weight for the boat to carry and less weight for the engines. There are no over-hanging paddle-boxes and sponsons, stays for ditto, &c., the wear and tear of which is saved as also their weight; the water washes under the boat to the wheel and the wheel has solid water to work in, particularly in rapid rivers where the water is broken or from the action of wind; the stern-wheel is always in the centre or deepest part of the river,

and the wheel does not cant out of the water as side-wheels do, in going round bends or heeling from any cause. In fact from the increased beam of the boat, she has always less tendency to "heel" over; when running aground she has her wheel well immersed to back off by, while a side-wheel boat generally runs her wheels wholly or partially out of the water, and if she cants as is generally the case, one wheel is entirely out of the water; the stern wheel is entirely enclosed and protected in every direction as shown in sketch, and the machinery is simpler and lighter, this form of construction gives more deck-room as well as more room for cabins or stowage; there is less resistance from the wind when ahead as there are no paddle-boxes; the rudder is entirely protected from contact with other vessels or other objects, and these Steamers can go backwards nearly as fast as forwards; in running up to wharves and on sand banks or for towing the absence of side-wheels and paddle-boxes is a great advantage. The boats steer in much less room than a side-paddle boat and have consequently a great advantage in circuitous and narrow channels. The boats may also be trimmed, if required, according to speed or towing power desired, which cannot be done with a side-wheel boat. There is no doubt but that in shallow rivers they will do much more work than a side-wheel boat of the same power, and particularly for towing against a stream, the slip of the wheel as tested being much less, one large paddle having less slip than two smaller ones on each side of a boat, and should the wheel require to be reefed it is quickly and easily done without any risk to the men in doing it, and less time than it requires to reef two wheels; they make no wave at a moderate speed and the wheel has feathering floats. The draught for the screw requires from four to six feet to be effective, and it is liable to become entangled by ropes, weeds, &c., and the blades are also liable to be broken or knocked off by coming in contact with the banks or other objects, and repairs involve considerable expense and delay as the vessel has to be docked or lifted out of the water; the bearings and even the hull are occasionally injured by the screw striking an object, the speed at which it works being very great.

3. Stern-wheel Boats are used on the Mississippi river for towing purposes, and they have been recently sent to the Californian rivers, and the Fraser river, also to the Amoor river in Asiatic Russia; but all these boats are of wood, and although they stern a rapid and shallow current much better than the side-wheel boats, they draw too much water, and the wheel is over-hanging, and subject to much vibration wear and tear which is not the case with the construction I build as the wheel is fully protected from all points. The two brackets or supports to the wheel displacing the weight of the over-hanging wheels in the American boats necessitates the boilers being placed very far forward. The Stern-wheel vessels have been recommended by Mr. William Burdon in his report on the navigation of the Punjaub rivers, and by Captain Haig the Government Engineer of the Godavery river, who visited the United States for the purpose of seeing the steam vessels on their rapid and shallow rivers, and it appears that the Stern-wheel Boats have in many cases to tow the Side-wheel Boats through the rapids with this description of wheel, the water washes under the vessel to the wheel solid, and cannot fly out laterally at the sides of the floats as is the case with the Side-wheel Boats, particularly in broken water in rapid currents.

4. The Russian Government have adopted this description of stern-wheel, having made many experiments for some months with a vessel of this kind in the Mersey under the superintendence of several Russian Officers and Engineers, three of these vessels are now being built for this Government by Mr. J. Hamilton of Liverpool.

5. The width of these vessels may be reduced, and a proportionate addition made to their length or a greater draught allowed for if desired.

No. 368. ORDER THEREON, 22nd February 1862, No. 287.

Ordered that copies of the foregoing papers be forwarded to the Deputy Chief Engineers of the Northern, Southern and Central Circles, for their information and for communication to the several District Engineers.

(Signed) W. H. HORSLEY, Lieut.-Colonel,
Secretary to Government.

Marine Department
No: 39 of 1861.

To The Right Honorable
Sir Charles Wood Bart: G.C.B.
Secretary of State for India

Dated Fort William 8th October 1861.

Sir

We have the honor to transmit for your information copy of a Memo: on the advantages of Stern Wheel Steam Boats for the navigation of Shallow Rivers as compared with side wheel and Screw Steamers.

We beg to suggest that the attention of the Directors of the River Steamers Companies which are in connexion with Government, and of those Officers who are employed to select Boats for the Post Service on the

the Sangor, the Khan and the Sodaney, may be drawn to the Steamers there described, which appear peculiarly suited to the shallow Rivers of India.

It would be very desirable to have them tried on the upper Punjaub Rivers, the Sogra and the Upper Sodaney, and if the vessels now building at Liverpool are favorably reported on, measures might be taken to send out three of suitable dimensions for trial on the above mentioned Rivers

We have &c
sd/ Canning
sd/ H. Ricketts
sd/ H.B.E. Frere
sd/ R. Napier.

No: 267

Memo: Copy forwarded to the Chief Secretary to the Government of

Fort Saint George for information.

Fort William
the
The 30 Dec: 1861.

John S. Medley
Offg Secretary Govt of India
Marine Department

Transferred to the Pub. Works. Dept.

[illegible]
Chief Secretary

No. 367 & 367

Pub. Works
~~Marine~~ 1862 Dept.
Pro. of Govt. for February

No. 394.

From

The Offg Secy to
the Govt of India.
Mar: Dt 267.

Dd 30th Decr
Rd 15th Jany 62.
Rd. 13th Feby 62.
Ans. Pro. No 16

Forwarding for information Copy of a Despatch addressed by the Secy of State ~~by that Govt~~ relative to the advantages that Stern Wheel Steam Boats possess for the navigation of Shallow Rivers as compared with Side Wheel & Screw Steamers.

No. 287 - 22nd February.

With an Order

No. 287.

Ordered that copies of the foregoing papers be forwarded to the Dy Chief Engrs of the Northern Southern and Central Circles, for their information and for communication to the several District Engineers.

By Order of
22nd February 1862

6 To The Dy Ch Engr Nn Circle Despr 25th
6 " do - " Sn Circles
6 " do - " Cl Circles

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